



April 23, 2015
Project No. 8128.01.12

Mr. Dana Bayuk
Oregon Department of Environmental Quality
2020 SW 4th Avenue
Portland, Oregon 97201-4987

Re: Fill WBZ Trench Design Evaluation Report – Gasco/Siltronic
Siltronic Corporation
7200 NW Front Avenue, Portland, OR
ECSI #183

Dear Dana:

Maul Foster & Alongi, Inc. (MFA) recently reviewed a draft version of the above-referenced report (the Trench Design Report, or TDR) prepared by Anchor QEA, LLC (AQ), on behalf of NW Natural (NWN). MFA subsequently reviewed the final version (submitted to the Oregon Department of Environmental Quality (DEQ) on April 8, 2015), and developed the following comments in order to clarify Siltronic's position regarding source control measures for the Fill Water Bearing Zone (WBZ) on the Siltronic property. These comments are a continuation of comments made on the Interim Design Report (IDR, reference, submitted by AQ in 2011) and subsequent documents, and are provided as they relate to the Siltronic property and the in-river alternatives under consideration that affect the Siltronic property.

Case for Source Control Unclear

As noted in previous correspondence¹, Siltronic fully supports DEQ's objectives as stated in the Joint Source Control Strategy (JSCS) – that is, implementation of source control that is practicable and effective.

The TDR includes an analysis of concentrations of site contaminants of interest (COIs) in groundwater. The results of this analysis indicate that mass loading of COIs from the Fill WBZ is minimal relative to loading from the alluvial WBZ, which is consistent with Siltronic's understanding of the site. This particular pathway (Fill WBZ discharge to the Willamette River) does not appear to represent an imminent threat to human health or the environment, nor does it appear to represent a significant risk of recontamination of an in-river remedy.

For comparison, it is well understood that recontamination due to possible resuspension of contaminated sediments (as a result of dredging) results in a much more significant recontamination risk. It is therefore reasonable to conclude that the minimal recontamination potential associated with Fill WBZ groundwater loading is of secondary concern relative to the

¹ Letter to Mr. Keith Johnson, DEQ, from MFA, dated 9/11/14.

site-wide recontamination potential associated with the in-water remedy. In other words, prioritizing Fill WBZ SCM implementation ahead of the in-water remedy does not make sense in the context of aggregate risk to human health or the environment.

For these reasons, and based on the analysis in the TDR, Siltronic maintains that the Fill WBZ pathway represents a lower priority for source control relative to the comprehensive set of alternatives for site restoration.

General Concurrence with Report Recommendations

The TDR recommends an alternative technology (horizontal wells) coupled with the sequencing described in the IDR (i.e., integrated with riverbank remediation alternatives under consideration by USEPA). Siltronic concurs with the TDR recommendations, as horizontal wells are a proven and demonstrated technology. Siltronic further concurs with the conclusion in the TDR that any source control measure (SCM) for the Fill WBZ be integrated and properly sequenced with the riverbank remedial components of the in-river portion of the Gasco-Siltronic Sediment site. Consistent with the TDR recommendations, Siltronic maintains that “proper sequencing” means that implementation of Fill WBZ SCMs will be contingent upon and secondary to the riverbank removal footprints.

Conceptual Site Model and Basis for Design

The TDR summarizes recent evaluations of Fill WBZ groundwater data in response to Alluvial HCC operation. These evaluations were completed to further understand the hydrogeology of the Fill and alluvial WBZs and support the hydrogeological conceptual site model (HCSM), as well as to support calibration of the MODFLOW model that is intended to demonstrate performance of the HCC system. The HCSM is the basis of design for the Fill and Alluvial WBZ SCMs.

As documented in the March 25, 2015 submittal to DEQ², the HCSM for the Siltronic portion of the site is not well understood (and additional data collection during the next HCC operational phase is recommended to further develop and understand the HCSM). This letter identified data that indicated that HCC operation results in drawdown and potential dewatering of the Fill WBZ. Furthermore, the evaluation identified geological and groundwater elevation data that are not consistent with the hydrogeological conceptual site model presented in the TDR or the preceding Draft Groundwater Source Control Final Design Report (Anchor QEA 2011).

It therefore may be premature to recommend or select any of the alternatives for the Siltronic property. Since the HCSM is a critical component for the basis of design of the SCM (and its performance), it would be inappropriate and impractical for the stakeholders to move forward with alternatives design absent concurrence on the HCSM and a clear understanding of the site

² Letter to Mr. Dana Bayuk from MFA reporting the results of the Fill WBZ Evaluation.

hydrogeology, specifically with respect to interactions between the Fill WBZ, the alluvial WBZ, and the Willamette River.

Consideration of Existing Structures and Property

Siltronic has no data to support the theory that the trench-based alternatives are implementable without significant and predictable damage to structures or property. That is, the trench-based alternatives are presumed to be high-risk and more likely to fail, relative to Alternatives 1 and 6.

The TDR acknowledges that additional data collection will be required to evaluate the potential for damage and consequent replacement costs resulting from trench construction on the Siltronic property. Siltronic appreciates the acknowledgement, but notes that the TDR does not accurately convey the magnitude or significance of the likely economic and operational impacts resulting from trench construction. Costs associated with restoration and replacement of structures and infrastructures could not be developed in time to inform the TDR, but will certainly render the trench-based alternatives significantly more expensive than the TDR estimates. The TDR therefore significantly underestimates the true costs of the trench-based alternatives (2 through 5) relative to Alternatives 1 and 6.

Summary

Siltronic continues to be an active and supportive partner with NWN, DEQ and USEPA in promoting safe and effective upland source control. We look forward to DEQ's approval of the recommendations in the TDR and supporting additional data collection as needed for successful design and implementation.

Please call either of us at (971) 544-2139 if you have questions or comments.

Sincerely,

Maul Foster & Alongi, Inc.



Ted J. Wall, PE
Oregon Operations Director/
Principal Engineer



James G.D. Peale, RG
Principal Hydrogeologist

cc (e-mail only):

Myron Burr, Siltronic Corporation
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